

SEQUENCE LISTING

<110> Yan et al.

<120> SUBSTRATES AND ASSAYS FOR BETA-SECRETASE ACTIVITY

<130> 29915/00281D

<140> To be assigned

<141> 2004-03-16

<150> 09/908,943

<151> 2001-07-19

<150> 60/219,795

<151> 2000-07-19

<160> 197

<170> PatentIn Ver. 2.0

<210> 1

<211> 2070

<212> DNA

<213> Homo sapiens

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| ctgcggctgc  | cccgggagac | cgacgaagag  | cccaggagc   | ccggccggag | gggcagcttt | 180  |
| gtggagatgg  | tggacaacct | gaggggcaag  | tgggggcagg  | gctactacgt | ggagatgacc | 240  |
| gtgggcagcc  | ccccgcagac | gctcaacatc  | ctggtggata  | caggcagcag | taactttgca | 300  |
| gtgggtgctg  | ccccccaccc | cttcctgcat  | cgctactacc  | agaggcagct | gtccagcaca | 360  |
| taccgggacc  | tccggaagg  | tgtgtatgtg  | ccctacaccc  | agggcaagt  | ggaaggggag | 420  |
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| gctgccatca  | ctgaatcaga | caagtcttc   | atcaacggct  | ccaactggga | aggcatcctg | 540  |
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| ctggtaaaag  | agaccacagt | tccaacctc   | ttctccctgc  | acctttgtgg | tgctggcttc | 660  |
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| ccaccaccca  | aatgcctctg | ccttgatgga  | gaaggaaaag  | gctggcaagg | tgggttccag | 1680 |
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| agaccaagct  | tgtttccctg | ctggccaaag  | tcagtaggag  | aggatgcaca | gtttgctatt | 1980 |
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 Glu Glu Pro Glu Glu Pro Gly Arg Arg Gly Ser Phe Val Glu Met Val  
       50                  55                  60  
 Asp Asn Leu Arg Gly Lys Ser Gly Gln Gly Tyr Tyr Val Glu Met Thr  
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 Val Gly Ser Pro Pro Gln Thr Leu Asn Ile Leu Val Asp Thr Gly Ser  
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 Ser Asn Phe Ala Val Gly Ala Ala Pro His Pro Phe Leu His Arg Tyr  
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       115                  120                  125  
 Tyr Val Pro Tyr Thr Gln Gly Lys Trp Glu Gly Glu Leu Gly Thr Asp  
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 Asp His Ser Leu Tyr Thr Gly Ser Leu Trp Tyr Thr Pro Ile Arg Arg  
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Thr Asn Gln Ser Phe Arg Ile Thr Ile Leu Pro Gln Gln Tyr Leu Arg  
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Gly Phe Tyr Val Val Phe Asp Arg Ala Arg Lys Arg Ile Gly Phe Ala  
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Gly Pro Phe Val Thr Leu Asp Met Glu Asp Cys Gly Tyr Asn Ile Pro  
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Gln Thr Asp Glu Ser Thr Leu Met Thr Ile Ala Tyr Val Met Ala Ala  
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Ile Cys Ala Leu Phe Met Leu Pro Leu Cys Leu Met Val Cys Gln Trp  
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Ile Ser Leu Leu Lys  
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Gly Leu Gly Gly Ala Pro Leu Gly Leu Arg Leu Pro Arg Glu Thr Asp
  35             40             45

Glu Glu Pro Glu Glu Pro Gly Arg Arg Gly Ser Phe Val Glu Met Val
  50             55             60

Asp Asn Leu Arg Gly Lys Ser Gly Gln Gly Tyr Tyr Val Glu Met Thr
  65             70             75             80

Val Gly Ser Pro Pro Gln Thr Leu Asn Ile Leu Val Asp Thr Gly Ser
          85             90             95

Ser Asn Phe Ala Val Gly Ala Ala Pro His Pro Phe Leu His Arg Tyr
          100            105            110

Tyr Gln Arg Gln Leu Ser Ser Thr Tyr Arg Asp Leu Arg Lys Gly Val
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Tyr Val Pro Tyr Thr Gln Gly Lys Trp Glu Gly Glu Leu Gly Thr Asp
          130            135            140

Leu Val Ser Ile Pro His Gly Pro Asn Val Thr Val Arg Ala Asn Ile
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Ala Ala Ile Thr Glu Ser Asp Lys Phe Phe Ile Asn Gly Ser Asn Trp
          165            170            175

Glu Gly Ile Leu Gly Leu Ala Tyr Ala Glu Ile Ala Arg Leu Cys Gly
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| Trp | Tyr | Thr | Pro | Ile | Arg | Arg | Glu | Trp | Tyr | Tyr | Glu | Val | Ile | Ile | Val |
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| Arg | Val | Glu | Ile | Asn | Gly | Gln | Asp | Leu | Lys | Met | Asp | Cys | Lys | Glu | Tyr |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |     |
| Asn | Tyr | Asp | Lys | Ser | Ile | Val | Asp | Ser | Gly | Thr | Thr | Asn | Leu | Arg | Leu |
|     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |     |     |
| Pro | Lys | Lys | Val | Phe | Glu | Ala | Ala | Val | Lys | Ser | Ile | Lys | Ala | Ala | Ser |
|     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |     |     |     |
| Ser | Thr | Glu | Lys | Phe | Pro | Asp | Gly | Phe | Trp | Leu | Gly | Glu | Gln | Leu | Val |
|     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     |
| Cys | Trp | Gln | Ala | Gly | Thr | Thr | Pro | Trp | Asn | Ile | Phe | Pro | Val | Ile | Ser |
| 305 |     |     |     |     | 310 |     |     |     |     | 315 |     |     |     |     | 320 |
| Leu | Tyr | Leu | Met | Gly | Glu | Val | Thr | Asn | Gln | Ser | Phe | Arg | Ile | Thr | Ile |
|     |     |     |     | 325 |     |     |     |     | 330 |     |     |     |     | 335 |     |
| Leu | Pro | Gln | Gln | Tyr | Leu | Arg | Pro | Val | Glu | Asp | Val | Ala | Thr | Ser | Gln |
|     |     |     | 340 |     |     |     |     | 345 |     |     |     |     | 350 |     |     |
| Asp | Asp | Cys | Tyr | Lys | Phe | Ala | Ile | Ser | Gln | Ser | Ser | Thr | Gly | Thr | Val |
|     |     | 355 |     |     |     |     | 360 |     |     |     |     | 365 |     |     |     |
| Met | Gly | Ala | Val | Ile | Met | Glu | Gly | Phe | Tyr | Val | Val | Phe | Asp | Arg | Ala |
|     | 370 |     |     |     |     | 375 |     |     |     |     | 380 |     |     |     |     |
| Arg | Lys | Arg | Ile | Gly | Phe | Ala | Val | Ser | Ala | Cys | His | Val | His | Asp | Glu |
| 385 |     |     |     |     | 390 |     |     |     |     | 395 |     |     |     |     | 400 |
| Phe | Arg | Thr | Ala | Ala | Val | Glu | Gly | Pro | Phe | Val | Thr | Leu | Asp | Met | Glu |
|     |     |     | 405 |     |     |     |     |     | 410 |     |     |     |     | 415 |     |
| Asp | Cys | Gly | Tyr | Asn | Ile | Pro | Gln | Thr | Asp | Glu | Ser | Thr | Leu | Met | Thr |
|     |     |     | 420 |     |     |     |     | 425 |     |     |     |     | 430 |     |     |
| Ile | Ala | Tyr | Val | Met | Ala | Ala | Ile | Cys | Ala | Leu | Phe | Met | Leu | Pro | Leu |
|     |     | 435 |     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |
| Cys | Leu | Met | Val | Cys | Gln | Trp | Arg | Cys | Leu | Arg | Cys | Leu | Arg | Gln | Gln |
|     | 450 |     |     |     |     | 455 |     |     |     |     | 460 |     |     |     |     |
| His | Asp | Asp | Phe | Ala | Asp | Asp | Ile | Ser | Leu | Leu | Lys |     |     |     |     |
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<223> Xaa = cysteic acid

<400> 27

Phe Val Asn Gln His Leu Xaa Gly Ser His Leu Val Glu Ala Leu Tyr  
1 5 10 15

Leu Val Xaa Gly Glu Arg Gly Phe Phe Tyr Thr Pro Lys Ala  
20 25 30

<210> 28  
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<223> Xaa=cysteic acid

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<223> Xaa=cysteic acid

<400> 28  
Gly Ile Val Glu Gln Xaa Xaa Ala Ser Val Xaa Ser Leu Tyr Gln Leu  
1 5 10 15  
Glu Asn Tyr Xaa Asn  
20

<210> 29  
<211> 23  
<212> PRT  
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<220>  
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peptide sequence

<400> 29  
Tyr Arg Tyr Gln Ser His Asp Tyr Ala Phe Ser Ser Val Glu Lys Leu  
1 5 10 15  
Leu His Ala Leu Gly Gly Cys  
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<210> 30  
<211> 23  
<212> PRT  
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<220>  
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<400> 30  
Tyr Arg Tyr Gln Ser His Asp Tyr Ala Phe Ser Ser Val Glu Lys Leu  
1 5 10 15  
Leu His Ala Leu Gly Gly Cys  
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<210> 31  
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<212> PRT  
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<220>  
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<400> 31  
Leu Val Asn Met Ala Glu Gly Asp  
1 5

<210> 32  
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<220>  
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<400> 32  
Arg Gly Ser Met Ala Gly Val Leu  
1 5

<210> 33  
<211> 8  
<212> PRT  
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<220>  
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peptide sequence

<400> 33  
Gly Thr Gln His Gly Ile Arg Leu  
1 5

<210> 34  
<211> 8  
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<400> 34  
Ser Ser Asn Phe Ala Val Gly Ala  
1 5

<210> 35  
<211> 8  
<212> PRT  
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peptide sequence  
  
<400> 35  
Gly Leu Ala Tyr Ala Glu Ile Ala  
1 5  
  
<210> 36  
<211> 8  
<212> PRT  
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peptide sequence  
  
<400> 36  
His Leu Cys Gly Ser His Leu Val  
1 5  
  
<210> 37  
<211> 8  
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<400> 37  
Cys Gly Glu Arg Gly Phe Phe Tyr  
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<400> 38  
Gly Val Leu Leu Ser Arg Lys  
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<210> 39  
<211> 7  
<212> PRT  
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<220>  
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peptide sequence

<400> 39

Val Gly Ser Gly Val Leu Leu  
1 5

<210> 40

<211> 5

<212> PRT

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<220>

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<400> 40

Val Gly Ser Gly Val  
1 5

<210> 41

<211> 12

<212> PRT

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<220>

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<223> Xaa= cysteic acid

<400> 41

Lys Val Glu Ala Leu Tyr Leu Val Xaa Gly Glu Arg  
1 5 10

<210> 42

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic  
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<400> 42

Trp Arg Arg Val Glu Ala Leu Tyr Leu Val Glu Gly Glu Arg Lys  
1 5 10 15

<210> 43

<211> 14

<212> PRT

<213> Artificial Sequence

<220>

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<400> 43  
Lys Val Glu Ala Asn Tyr Leu Val Glu Gly Glu Arg Lys Lys  
1 5 10

<210> 44  
<211> 4  
<212> PRT  
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<220>  
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peptide sequence

<400> 44  
Met Leu Leu Leu  
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<210> 45  
<211> 6  
<212> PRT  
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<220>  
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peptide sequence

<400> 45  
Asp Ala Ala His Pro Gly  
1 5

<210> 46  
<211> 14  
<212> PRT  
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<220>  
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<400> 46  
Lys Val Glu Ala Asn Tyr Asp Val Glu Gly Glu Arg Lys Lys  
1 5 10

<210> 47  
<211> 14  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: synthetic  
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<400> 47  
Lys Val Glu Ala Asn Leu Ala Val Glu Gly Glu Arg Lys Lys  
1 5 10

<210> 48  
<211> 14



<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: synthetic  
peptide sequence

<400> 48  
Lys Val Glu Ala Leu Tyr Ala Val Glu Gly Glu Arg Lys Lys  
1 5 10

<210> 49  
<211> 8  
<212> PRT  
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<220>  
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<220>  
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<223> Xaa = E, G, I, D, T, cysteic acid or S

<400> 49  
Xaa Ala Asn Tyr Glu Val Glu Phe  
1 5

<210> 50  
<211> 8  
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<220>  
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peptide sequence

<220>  
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<222> (2)  
<223> Xaa= A, V, I, S, H, Y, T or F

<400> 50  
Glu Xaa Asn Tyr Glu Val Glu Phe  
1 5

<210> 51  
<211> 8  
<212> PRT  
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<220>  
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peptide sequence

<220>  
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<222> (3)  
<223> Xaa= N, L, K, S, G, T, D, A, Q, or E

<400> 51  
Glu Ala Xaa Tyr Glu Val Glu Phe  
1 5

<210> 52  
<211> 8  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: synthetic  
peptide sequence

<220>  
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<222> (4)  
<223> Xaa= Y, L, M, Nle, F or H

<400> 52  
Glu Ala Asn Xaa Glu Val Glu Phe  
1 5

<210> 53  
<211> 8  
<212> PRT  
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<220>  
<223> Description of Artificial Sequence: synthetic  
peptide sequence

<220>  
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<222> (5)  
<223> Xaa= E, A, D, M, Q, S or G

<400> 53  
Glu Ala Asn Tyr Xaa Val Glu Phe  
1 5

<210> 54  
<211> 8  
<212> PRT  
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<220>  
<223> Description of Artificial Sequence: synthetic  
peptide sequence

<220>  
<221> SITE  
<222> (6)  
<223> Xaa= V, A, N, T, L, F or S

<400> 54  
Glu Ala Asn Tyr Glu Xaa Glu Phe  
1 5

<210> 55

<211> 8  
<212> PRT  
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<220>  
<223> Description of Artificial Sequence: synthetic  
peptide sequence

<220>  
<221> SITE  
<222> (7)  
<223> Xaa= E, G, F, H, cysteic acid or S

<400> 55  
Glu Ala Asn Tyr Glu Val Xaa Phe  
1 5

<210> 56  
<211> 8  
<212> PRT  
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<220>  
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peptide sequence

<220>  
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<222> (8)  
<223> Xaa= F, W, G, A, H, P, G, N, S or E

<400> 56  
Glu Ala Asn Tyr Glu Val Glu Xaa  
1 5

<210> 57  
<211> 8  
<212> PRT  
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<220>  
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peptide sequence

<220>  
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<222> (1)  
<223> Xaa= E, G, I, D, T, cyeteic acid or S

<400> 57  
Xaa Val Leu Leu Ala Ala Gly Trp  
1 5

<210> 58  
<211> 8  
<212> PRT  
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<220>  
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peptide sequence

<220>  
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<223> Xaa= A, V, I, S, H, Y, T or F

<400> 58  
Gly Xaa Leu Leu Ala Ala Gly Trp  
1 5

<210> 59  
<211> 8  
<212> PRT  
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<220>  
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peptide sequence

<220>  
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<223> Xaa= N, L, K, S, G, T, D, A, Q or E

<400> 59  
Gly Val Xaa Leu Ala Ala Gly Trp  
1 5

<210> 60  
<211> 8  
<212> PRT  
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<220>  
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peptide sequence

<220>  
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<222> (4)  
<223> Xaa= Y, L, M, Nle, F or H

<400> 60  
Gly Val Leu Xaa Ala Ala Gly Trp  
1 5

<210> 61  
<211> 8  
<212> PRT  
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<220>  
<223> Description of Artificial Sequence: synthetic  
peptide sequence

<220>  
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<222> (5)  
<223> Xaa= E, A, D, M, Q, S or G

<400> 61  
Gly Val Leu Leu Xaa Ala Gly Trp  
1 5

<210> 62  
<211> 8  
<212> PRT  
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<220>  
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<222> (6)  
<223> Xaa= V, A, N, T, L, F or S

<400> 62  
Gly Val Leu Leu Ala Xaa Gly Trp  
1 5

<210> 63  
<211> 8  
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<220>  
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peptide sequence

<220>  
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<222> (7)  
<223> Xaa= E, G, F, H, cysteic acid or S

<400> 63  
Gly Val Leu Leu Ala Ala Xaa Trp  
1 5

<210> 64  
<211> 8  
<212> PRT  
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<220>  
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peptide sequence

<220>  
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<222> (8)  
<223> Xaa= F, W, G, A, H, P, G, N or S

<400> 64  
Gly Val Leu Leu Ala Ala Gly Xaa  
1 5

<210> 65

<211> 8  
<212> PRT  
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<220>  
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<400> 65  
Xaa Ile Lys Met Asp Asn Phe Gly  
1 5

<210> 66  
<211> 8  
<212> PRT  
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<220>  
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peptide sequence

<220>  
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<222> (2)  
<223> Xaa= A, V, I, S, H, Y, T or F

<400> 66  
Ile Xaa Lys Met Asp Asn Phe Gly  
1 5

<210> 67  
<211> 8  
<212> PRT  
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<220>  
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peptide sequence

<220>  
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<223> Xaa= N, L, K, S, G, T, D, A, Q or E

<400> 67  
Ile Ile Xaa Met Asp Asn Phe Gly  
1 5

<210> 68  
<211> 8  
<212> PRT  
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<220>  
<223> Description of Artificial Sequence: synthetic

peptide sequence

<220>  
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<222> (4)  
<223> Xaa= Y, L, M, Nle, F or H

<400> 68  
Ile Ile Lys Xaa Asp Asn Phe Gly  
1 5

<210> 69  
<211> 8  
<212> PRT  
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<220>  
<223> Description of Artificial Sequence: synthetic  
peptide sequence

<220>  
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<222> (5)  
<223> Xaa= E, A, D, M, Q, S or G

<400> 69  
Ile Ile Lys Met Xaa Asn Phe Gly  
1 5

<210> 70  
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<220>  
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<220>  
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<223> Xaa= V, A, N,T, L, F or S

<400> 70  
Ile Ile Lys Met Asp Xaa Phe Gly  
1 5

<210> 71  
<211> 8  
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<220>  
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<222> (7)

<223> Xaa= E, G, F, H, cysteic acid or S

<400> 71

Ile Ile Lys Met Asp Asn Xaa Gly  
1 5

<210> 72

<211> 8

<212> PRT

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<220>

<223> Description of Artificial Sequence: synthetic  
peptide sequence

<220>

<221> SITE

<222> (8)

<223> Xaa= F, W, G, A, H, P, G, N or S

<400> 72

Ile Ile Lys Met Asp Asn Phe Xaa  
1 5

<210> 73

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic  
peptide sequence

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<221> SITE

<222> (1)

<223> Xaa= E, G, I, D, T, cysteic acid or S

<400> 73

Xaa Ser Ser Asn Leu Glu Met Thr His Ala  
1 5 10

<210> 74

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic  
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<222> (2)

<223> Xaa= A, V, I, S, H, Y, T or F

<400> 74

Asp Xaa Ser Asn Leu Glu Met Thr His Ala  
1 5 10



<210> 75  
<211> 10  
<212> PRT  
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<400> 75  
Asp Ser Xaa Asn Leu Glu Met Thr His Ala  
1 5 10

<210> 76  
<211> 8  
<212> PRT  
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<220>  
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<223> Xaa= Y, L, M, Nle, F or H

<400> 76  
Asp Ser Ser Xaa Met Thr His Ala  
1 5

<210> 77  
<211> 10  
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<400> 77  
Asp Ser Ser Asn Leu Glu Xaa Thr His Ala  
1 5 10

<210> 78  
<211> 10  
<212> PRT  
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<223> Description of Artificial Sequence: synthetic peptide sequence

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<221> SITE

<222> (8)

<223> Xaa= V, A, N, T, L, F or S

<400> 78

Asp Ser Ser Asn Leu Glu Met Xaa His Ala  
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<210> 79

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic peptide sequence

<220>

<221> SITE

<222> (8)

<223> Xaa= E, G, F, H, cysteic acid or S

<400> 79

Asp Ser Asn Leu Glu Met Thr Xaa Ala  
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<210> 80

<211> 9

<212> PRT

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<223> Description of Artificial Sequence: synthetic peptide sequence

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<222> (9)

<223> Xaa= F, W, G, A, H, P, G, N or S

<400> 80

Asp Ser Asn Leu Glu Met Thr His Xaa  
1 5

<210> 81

<211> 8

<212> PRT

<213> Artificial Sequence

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<223> Description of Artificial Sequence: synthetic peptide sequence

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<220>

<221> SITE

<222> (7)

<223> Xaa= cysteic acid

<400> 81

Xaa His Gly Phe Gln Leu Xaa His

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5

<210> 82

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<212> PRT

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<220>

<223> Description of Artificial Sequence: synthetic peptide sequence

<220>

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<222> (2)

<223> Xaa= A, V, I, S, H, Y, T or F

<220>

<221> SITE

<222> (7)

<223> Xaa= cysteic acid

<400> 82

Thr Xaa Gly Phe Gln Leu Xaa His

1

5

<210> 83

<211> 8

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic peptide sequence

<220>

<221> SITE

<222> (3)

<223> Xaa= N, L, K, S, G, T, D, A, Q or E

<220>

<221> SITE

<222> (7)

<223> Xaa= cysteic acid

<400> 83

Thr His Xaa Phe Gln Leu Xaa His

1

5

<210> 84

<211> 8

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic peptide sequence

<220>

<221> SITE

<222> (4)

<223> Xaa= Y, L, M, Nle, F or H

<220>

<221> SITE

<222> (7)

<223> Xaa= cysteic acid

<400> 84

Thr His Gly Xaa Gln Leu Xaa His  
1 5

<210> 85

<211> 8

<212> PRT

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<220>

<221> SITE

<222> (7)

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<400> 85

Thr His Gly Phe Xaa Leu Xaa His  
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<210> 86

<211> 8

<212> PRT

<213> Artificial Sequence

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<223> Description of Artificial Sequence: synthetic peptide sequence

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<222> (6)

<223> Xaa= V, A, N, T, L, F or S

<220>

<221> SITE

<222> (7)

<223> Xaa= cysteic acid

<400> 86  
Thr His Gly Phe Gln Xaa Xaa His  
1 5

<210> 87  
<211> 8  
<212> PRT  
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<220>  
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peptide sequence

<220>  
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<222> (7)  
<223> Xaa= E, G, F, H, cysteic acid or S

<400> 87  
Thr His Gly Phe Gln Leu Xaa His  
1 5

<210> 88  
<211> 8  
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peptide sequence

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<222> (7)  
<223> Xaa= cysteic acid

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<221> SITE  
<222> (8)  
<223> Xaa= F, W, G, A, H, P, G, N or S

<400> 88  
Thr His Gly Phe Gln Leu Xaa Xaa  
1 5

<210> 89  
<211> 8  
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peptide sequence

<220>  
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<222> (1)  
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<400> 89

Xaa Tyr Thr His Ser Phe Ser Pro  
1 5

<210> 90  
<211> 8  
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<400> 90  
Xaa Xaa Thr His Ser Phe Ser Pro  
1 5

<210> 91  
<211> 8  
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<400> 91  
Xaa Tyr Xaa His Ser Phe Ser Pro  
1 5

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peptide sequence

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Xaa Tyr Thr Xaa Ser Phe Ser Pro  
1 5

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peptide sequence

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<223> Xaa= cysteic acid

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<400> 93  
Xaa Tyr Thr His Xaa Phe Ser Pro  
1 5

<210> 94  
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peptide sequence

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<400> 94  
Xaa Tyr Thr His Ser Xaa Ser Pro  
1 5

<210> 95  
<211> 8

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peptide sequence

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<223> Xaa=E, G, F, H, cysteic acid or S

<400> 95  
Xaa Tyr Thr His Ser Phe Xaa Pro  
1 5

<210> 96  
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peptide sequence

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Ser Xaa Asp Xaa Gly Ser Xaa Gly

1

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<210> 102

<211> 8

<212> PRT

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<220>

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<223> Xaa= V, A, N, T, L, F or S

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<210> 103

<211> 8

<212> PRT

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<210> 105  
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Trp

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Lys

<210> 117



<211> 11  
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Leu His Leu Gly Gly Cys  
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20 25 30  
Glu Lys Val Asp Thr Gln Pro Asn Val Leu His Asn Asp Pro His Ala  
35 40 45  
Arg His Ser Asp Asp Asn Gly Gln Asn His Leu Glu Gly Gln Met Asn  
50 55 60  
Phe Asn Ala Asp Ser Ser Gln His Lys Asp Glu Asn Thr Asp Ile Ala  
65 70 75 80  
Glu Asn Leu Tyr Gln Lys Val Arg Ile Leu Cys Trp Val Met Thr Gly  
85 90 95  
Pro Gln Asn Leu Glu Lys Lys Ala Lys His Val Lys Ala Thr Trp Ala  
100 105 110  
Gln Arg Cys Asn Lys Val Leu Phe Met Ser Ser Glu Glu Asn Lys Asp  
115 120 125

Phe Pro Ala Val Gly Leu Lys Thr Lys Glu Gly Arg Asp Gln Leu Tyr  
 130 135 140  
 Trp Lys Thr Ile Lys Ala Phe Gln Tyr Val His Glu His Tyr Leu Glu  
 145 150 155 160  
 Asp Ala Asp Trp Phe Leu Lys Ala Asp Asp Thr Tyr Val Ile Leu  
 165 170 175  
 Asp Asn Leu Arg Trp Leu Leu Ser Lys Tyr Asp Pro Glu Glu Pro Ile  
 180 185 190  
 Tyr Phe Gly Arg Arg Phe Lys Pro Tyr Val Lys Gln Gly Tyr Met Ser  
 195 200 205  
 Gly Gly Ala Gly Tyr Val Leu Ser Lys Glu Ala Leu Lys Arg Phe Val  
 210 215 220  
 Asp Ala Phe Lys Thr Asp Lys Cys Thr His Ser Ser Ser Ile Glu Asp  
 225 230 235 240  
 Leu Ala Leu Gly Arg Cys Met Glu Ile Met Asn Val Glu Ala Gly Asp  
 245 250 255  
 Ser Arg Asp Thr Ile Gly Lys Glu Thr Phe His Pro Phe Val Pro Glu  
 260 265 270  
 His His Leu Ile Lys Gly Tyr Leu Pro Arg Thr Phe Trp Tyr Trp Asn  
 275 280 285  
 Tyr Asn Tyr Tyr Pro Pro Val Glu Gly Pro Gly Cys Cys Ser Asp Leu  
 290 295 300  
 Ala Val Ser Phe His Tyr Val Asp Ser Thr Thr Met Tyr Glu Leu Glu  
 305 310 315 320  
 Tyr Leu Val Tyr His Leu Arg Pro Tyr Gly Tyr Leu Tyr Arg Tyr Gln  
 325 330 335  
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 Asn Glu Asp Thr Lys Val Lys Leu Gly Asn Pro  
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<220>

<223> Homo sapiens sialyltransferase 1

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Tyr Tyr Asp Ser Phe Lys Leu Gln Thr Lys Glu Phe Gln Val Leu Lys

| 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Leu | Gly | Lys | Leu | Ala | Met | Gly | Ser | Asp | Ser | Gln | Ser | Val | Ser | Ser |
| 50  |     |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |
| Ser | Ser | Thr | Gln | Asp | Pro | His | Arg | Gly | Arg | Gln | Thr | Leu | Gly | Ser | Leu |
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     |     | 80  |
| Arg | Gly | Leu | Ala | Lys | Ala | Lys | Pro | Glu | Ala | Ser | Phe | Gln | Val | Trp | Asn |
|     |     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |
| Lys | Asp | Ser | Ser | Ser | Lys | Asn | Leu | Ile | Pro | Arg | Leu | Gln | Lys | Ile | Trp |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Lys | Asn | Tyr | Leu | Ser | Met | Asn | Lys | Tyr | Lys | Val | Ser | Tyr | Lys | Gly | Pro |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |
| Gly | Pro | Gly | Ile | Lys | Phe | Ser | Ala | Glu | Ala | Leu | Arg | Cys | His | Leu | Arg |
|     | 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |
| Asp | His | Val | Asn | Val | Ser | Met | Val | Glu | Val | Thr | Asp | Phe | Pro | Phe | Asn |
| 145 |     |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     | 160 |
| Thr | Ser | Glu | Trp | Glu | Gly | Tyr | Leu | Pro | Lys | Glu | Ser | Ile | Arg | Thr | Lys |
|     |     |     |     | 165 |     |     |     |     | 170 |     |     |     |     | 175 |     |
| Ala | Gly | Pro | Trp | Gly | Arg | Cys | Ala | Val | Val | Ser | Ser | Ala | Gly | Ser | Leu |
|     |     |     | 180 |     |     |     |     | 185 |     |     |     |     | 190 |     |     |
| Lys | Ser | Ser | Gln | Leu | Gly | Arg | Glu | Ile | Asp | Asp | His | Asp | Ala | Val | Leu |
|     |     | 195 |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |
| Arg | Phe | Asn | Gly | Ala | Pro | Thr | Ala | Asn | Phe | Gln | Gln | Asp | Val | Gly | Thr |
|     | 210 |     |     |     |     | 215 |     |     |     |     |     | 220 |     |     |     |
| Lys | Thr | Thr | Ile | Arg | Leu | Met | Asn | Ser | Gln | Leu | Val | Thr | Thr | Glu | Lys |
| 225 |     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |
| Arg | Phe | Leu | Lys | Asp | Ser | Leu | Tyr | Asn | Glu | Gly | Ile | Leu | Ile | Val | Trp |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |     |
| Asp | Pro | Ser | Val | Tyr | His | Ser | Asp | Ile | Pro | Lys | Trp | Tyr | Gln | Asn | Pro |
|     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |     |     |
| Asp | Tyr | Asn | Phe | Phe | Asn | Asn | Tyr | Lys | Thr | Tyr | Arg | Lys | Leu | His | Pro |
|     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |     |     |     |
| Asn | Gln | Pro | Phe | Tyr | Ile | Leu | Lys | Pro | Gln | Met | Pro | Trp | Glu | Leu | Trp |
|     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     |
| Asp | Ile | Leu | Gln | Glu | Ile | Ser | Pro | Glu | Glu | Ile | Gln | Pro | Asn | Pro | Pro |
| 305 |     |     |     |     |     | 310 |     |     |     |     | 315 |     |     |     | 320 |
| Ser | Ser | Gly | Met | Leu | Gly | Ile | Ile | Ile | Met | Met | Thr | Leu | Cys | Asp | Gln |
|     |     |     |     | 325 |     |     |     |     | 330 |     |     |     |     | 335 |     |
| Val | Asp | Ile | Tyr | Glu | Phe | Leu | Pro | Ser | Lys | Arg | Lys | Thr | Asp | Val | Cys |
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| Tyr | Tyr | Tyr | Gln | Lys | Phe | Phe | Asp | Ser | Ala | Cys | Thr | Met | Gly | Ala | Tyr |
|     |     | 355 |     |     |     |     | 360 |     |     |     |     | 365 |     |     |     |
| His | Pro | Leu | Leu | Tyr | Glu | Lys | Asn | Leu | Val | Lys | His | Leu | Asn | Gln | Gly |

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Pro Gly Thr Pro Ala Glu Arg His Ala Asp Gly Leu Ala Leu Ala Leu  
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Glu Pro Ala Leu Ala Ser Pro Ala Gly Ala Ala Asn Phe Leu Ala Met  
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Val Asp Asn Leu Gln Gly Asp Ser Gly Arg Gly Tyr Tyr Leu Glu Met  
85 90 95  
Leu Ile Gly Thr Pro Pro Gln Lys Leu Gln Ile Leu Val Asp Thr Gly  
100 105 110  
Ser Ser Asn Phe Ala Val Ala Gly Thr Pro His Ser Tyr Ile Asp Thr  
115 120 125  
Tyr Phe Asp Thr Glu Arg Ser Ser Thr Tyr Arg Ser Lys Gly Phe Asp  
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Trp Asn Gly Ile Leu Gly Leu Ala Tyr Ala Thr Leu Ala Lys Pro Ser  
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          35           40           45

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          50           55           60

Asp Glu Thr Ile Ser Ile Val Glu Ala Asn Pro Arg Lys Phe Asn Leu
          65           70           75           80

Asp Ala Thr Glu Leu Ser Ile Arg Lys Ala Phe Ile Thr Ser Thr Arg
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Gln Val Val Arg Asp Met Lys Asp Gln Met Ser Thr Ser Ser Val Gln
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Arg Glu Leu Gln Arg Ala Asn Ser His Phe Ile Glu Glu Gln Gln Ala
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Glu Ser Thr Gln Ser Arg Leu Asp Asn Val Met Lys Lys Leu Ala Lys
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caggacatcg ctacgcagct catctccaac atggacattg acgtgatcct aggtggaggc 660
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gggtgggacca ggctggacgg gaagaatctg gtgcaggaat ggctggcgaa gcgccagggt 780
gcccgggtatg tgtggaaccg cactgagctc atgcaggctt ccctggaccc gtctgtgacc 840
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ctggaccctt ccctgatgga gatgacagag gctgcctgc gcctgctgag caggaacccc 960
cgcggtctct tcctcttcgt ggaggggtgt cgcatcgacc atgggtcatca tgaaagcagg 1020
gcttaccggg cactgactga gacgatcatg ttcgacgacg ccattgagag ggcgggccag 1080
ctcaccagcg aggaggacac gctgagcctc gtcactgccg accactccca cgtcttctcc 1140
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gacaggaagg cctacacggg cctcctatac ggaaacggtc caggctatgt gctcaaggac 1260
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gacgcccgcg acccaggtaa ctatgaagtt gaattccgaa gagcactcta cgtagagggt 1560
gaaagaggat tcttctacac tccaaaggca ctctacctcg tagagggtga aagaggattc 1620
ttctacacta gtctcatgac catagcctat gtcatggctg ccactcgcg cctcttcatg 1680
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<210> 128

<211> 575

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: recombinant fusion protein sequence

<400> 128

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Met Leu Leu Leu Leu Leu Leu Leu Gly Leu Arg Leu Gln Leu Ser Leu
  1                      5                      10                      15

```

```

Gly Ile Ile Pro Val Glu Glu Glu Asn Pro Asp Phe Trp Asn Arg Glu
                20                25                30

```

```

Ala Ala Glu Ala Leu Gly Ala Ala Lys Lys Leu Gln Pro Ala Gln Thr
  35                      40                      45

```

```

Ala Ala Lys Asn Leu Ile Ile Phe Leu Gly Asp Gly Met Gly Val Ser
  50                      55                      60

```

```

Thr Val Thr Ala Ala Arg Ile Leu Lys Gly Gln Lys Lys Asp Lys Leu
  65                      70                      75                      80

```

```

Gly Pro Glu Ile Pro Leu Ala Met Asp Arg Phe Pro Tyr Val Ala Leu
                85                90                95

```

```

Ser Lys Thr Tyr Asn Val Asp Lys His Val Pro Asp Ser Gly Ala Thr
  100                105                110

```

```

Ala Thr Ala Tyr Leu Cys Gly Val Lys Gly Asn Phe Gln Thr Ile Gly
  115                120                125

```

```

Leu Ser Ala Ala Ala Arg Phe Asn Gln Cys Asn Thr Thr Arg Gly Asn
  130                135                140

```



|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Val | Ile | Ser | Val | Met | Asn | Arg | Ala | Lys | Lys | Ala | Gly | Lys | Ser | Val | 145 | 150 | 155 | 160 |
| Gly | Val | Val | Thr | Thr | Thr | Arg | Val | Gln | His | Ala | Ser | Pro | Ala | Gly | Thr | 165 | 170 |     | 175 |
| Tyr | Ala | His | Thr | Val | Asn | Arg | Asn | Trp | Tyr | Ser | Asp | Ala | Asp | Val | Pro | 180 | 185 |     | 190 |
| Ala | Ser | Ala | Arg | Gln | Glu | Gly | Cys | Gln | Asp | Ile | Ala | Thr | Gln | Leu | Ile | 195 | 200 |     | 205 |
| Ser | Asn | Met | Asp | Ile | Asp | Val | Ile | Leu | Gly | Gly | Gly | Arg | Lys | Tyr | Met | 210 | 215 |     | 220 |
| Phe | Pro | Met | Gly | Thr | Pro | Asp | Pro | Glu | Tyr | Pro | Asp | Asp | Tyr | Ser | Gln | 225 | 230 |     | 235 |
| Gly | Gly | Thr | Arg | Leu | Asp | Gly | Lys | Asn | Leu | Val | Gln | Glu | Trp | Leu | Ala | 245 | 250 |     | 255 |
| Lys | Arg | Gln | Gly | Ala | Arg | Tyr | Val | Trp | Asn | Arg | Thr | Glu | Leu | Met | Gln | 260 | 265 |     | 270 |
| Ala | Ser | Leu | Asp | Pro | Ser | Val | Thr | His | Leu | Met | Gly | Leu | Phe | Glu | Pro | 275 | 280 |     | 285 |
| Gly | Asp | Met | Lys | Tyr | Glu | Ile | His | Arg | Asp | Ser | Thr | Leu | Asp | Pro | Ser | 290 | 295 |     | 300 |
| Leu | Met | Glu | Met | Thr | Glu | Ala | Ala | Leu | Arg | Leu | Leu | Ser | Arg | Asn | Pro | 305 | 310 |     | 315 |
| Arg | Gly | Phe | Phe | Leu | Phe | Val | Glu | Gly | Gly | Arg | Ile | Asp | His | Gly | His | 325 | 330 |     | 335 |
| His | Glu | Ser | Arg | Ala | Tyr | Arg | Ala | Leu | Thr | Glu | Thr | Ile | Met | Phe | Asp | 340 | 345 |     | 350 |
| Asp | Ala | Ile | Glu | Arg | Ala | Gly | Gln | Leu | Thr | Ser | Glu | Glu | Asp | Thr | Leu | 355 | 360 |     | 365 |
| Ser | Leu | Val | Thr | Ala | Asp | His | Ser | His | Val | Phe | Ser | Phe | Gly | Gly | Tyr | 370 | 375 |     | 380 |
| Pro | Leu | Arg | Gly | Ser | Ser | Ile | Phe | Gly | Leu | Ala | Pro | Gly | Lys | Ala | Arg | 385 | 390 |     | 395 |
| Asp | Arg | Lys | Ala | Tyr | Thr | Val | Leu | Leu | Tyr | Gly | Asn | Gly | Pro | Gly | Tyr | 405 | 410 |     | 415 |
| Val | Leu | Lys | Asp | Gly | Ala | Arg | Pro | Asp | Val | Thr | Glu | Ser | Glu | Ser | Gly | 420 | 425 |     | 430 |
| Ser | Pro | Glu | Tyr | Arg | Gln | Gln | Ser | Ala | Val | Pro | Leu | Asp | Glu | Glu | Thr | 435 | 440 |     | 445 |
| His | Ala | Gly | Glu | Asp | Val | Ala | Val | Phe | Ala | Arg | Gly | Pro | Gln | Ala | His | 450 | 455 |     | 460 |
| Leu | Val | His | Gly | Val | Gln | Glu | Gln | Thr | Phe | Ile | Ala | His | Val | Met | Ala | 465 | 470 |     | 475 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Phe | Ala | Ala | Cys | Leu | Glu | Pro | Tyr | Thr | Ala | Cys | Asp | Leu | Ala | Pro | Pro |
|     |     |     |     | 485 |     |     |     |     | 490 |     |     |     |     | 495 |     |
| Ala | Gly | Thr | Thr | Asp | Ala | Ala | His | Pro | Gly | Asn | Tyr | Glu | Val | Glu | Pro |
|     |     |     | 500 |     |     |     |     | 505 |     |     |     |     | 510 |     |     |
| Arg | Arg | Ala | Leu | Tyr | Val | Glu | Gly | Glu | Arg | Gly | Phe | Phe | Tyr | Thr | Pro |
|     |     | 515 |     |     |     |     | 520 |     |     |     |     | 525 |     |     |     |
| Lys | Ala | Leu | Tyr | Leu | Val | Glu | Gly | Glu | Arg | Gly | Phe | Phe | Tyr | Thr | Ser |
|     | 530 |     |     |     |     | 535 |     |     |     |     | 540 |     |     |     |     |
| Leu | Met | Thr | Ile | Ala | Tyr | Val | Met | Ala | Ala | Ile | Cys | Ala | Leu | Phe | Met |
| 545 |     |     |     | 550 |     |     |     |     |     | 555 |     |     |     |     | 560 |
| Leu | Pro | Leu | Cys | Leu | Met | Val | Asp | Tyr | Lys | Asp | Asp | Asp | Asp | Lys |     |
|     |     |     | 565 |     |     |     |     |     | 570 |     |     |     |     | 575 |     |

<210> 129  
 <211> 5  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: synthetic  
 peptide sequence

<400> 129  
 Lys Met Asp Ala Glu  
 1 5

<210> 130  
 <211> 5  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: synthetic  
 peptide sequence

<400> 130  
 Gly Arg Arg Gly Ser  
 1 5

<210> 131  
 <211> 10  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: synthetic  
 peptide sequence

<400> 131  
 Val Glu Ala Asn Tyr Glu Val Glu Gly Glu  
 1 5 10

<210> 132  
 <211> 10

<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: synthetic  
peptide sequence

<400> 132  
Val Glu Ala Asn Tyr Ala Val Glu Gly Glu  
1 5 10

<210> 133  
<211> 10  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: synthetic  
peptide sequence

<400> 133  
Lys Thr Ile Asn Leu Glu Val Glu Pro Ser  
1 5 10

<210> 134  
<211> 10  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: synthetic  
peptide sequence

<220>  
<221> MOD\_RES  
<222> (5)  
<223> Nle

<400> 134  
Lys Thr Ile Asn Xaa Glu Val Glu Pro Ser  
1 5 10

<210> 135  
<211> 10  
<212> PRT  
<213> Artificial Sequence

<220>  
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<222> (5)  
<223> Nle

<220>  
<223> Description of Artificial Sequence: synthetic  
peptide sequence

<400> 135  
Lys Thr Ile Asn Xaa Glu Val Asp Pro Ser

1 5 10

<210> 136  
<211> 10  
<212> PRT  
<213> Artificial Sequence

<220>  
<221> MOD\_RES  
<222> (5)  
<223> Nle

<220>  
<223> Description of Artificial Sequence: synthetic  
peptide sequence

<400> 136  
Lys Thr Ile Asn Xaa Asp Val Asp Pro Ser  
1 5 10

<210> 137  
<211> 10  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: synthetic  
peptide sequence

<400> 137  
Lys Thr Ile Ser Leu Asp Val Glu Pro Ser  
1 5 10

<210> 138  
<211> 10  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: synthetic  
peptide sequence

<400> 138  
Lys Thr Ile Ser Leu Asp Val Asp Pro Ser  
1 5 10

<210> 139  
<211> 4  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: synthetic  
peptide sequence

<400> 139  
Lys Met Asp Ala  
1

<210> 140  
<211> 4  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: synthetic  
peptide sequence

<400> 140  
Ser Tyr Glu Val  
1

<210> 141  
<211> 10  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: synthetic  
peptide sequence

<400> 141  
Ser Glu Val Ser Tyr Glu Val Glu Phe Arg  
1 5 10

<210> 142  
<211> 4  
<212> PRT  
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<220>  
<223> Description of Artificial Sequence: synthetic  
peptide sequence

<400> 142  
Asn Leu Asp Ala  
1

<210> 143  
<211> 10  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: synthetic  
peptide sequence

<400> 143  
Ser Glu Val Ser Tyr Asp Ala Glu Phe Arg  
1 5 10

<210> 144  
<211> 10  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: synthetic

peptide sequence

<400> 144

Ser Glu Val Ser Tyr Glu Ala Glu Phe Arg  
1 5 10

<210> 145

<211> 25

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic  
peptide sequence

<400> 145

Thr Arg Pro Gly Ser Gly Leu Thr Asn Ile Lys Thr Glu Glu Ile Ser  
1 5 10 15

Glu Val Ser Tyr Glu Val Glu Phe Arg  
20 25

<210> 146

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic  
peptide sequence

<400> 146

Gly Leu Thr Asn Ile Lys Thr Glu Glu Ile Ser Glu Val Ser Tyr Glu  
1 5 10 15

Val Glu Phe Arg  
20

<210> 147

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic  
peptide sequence

<400> 147

Lys Thr Glu Glu Ile Ser Glu Val Ser Tyr Glu Val Glu Phe Arg  
1 5 10 15

<210> 148

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic  
peptide sequence

<400> 148

Thr Glu Val Ser Tyr Glu Val Glu Phe Arg  
1 5 10

<210> 149

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic  
peptide sequence

<400> 149

Ser Glu Val Asp Tyr Glu Val Glu Phe Arg  
1 5 10

<210> 150

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic  
peptide sequence

<400> 150

Thr Glu Val Asp Tyr Glu Val Glu Phe Arg  
1 5 10

<210> 151

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic  
peptide sequence

<400> 151

Thr Glu Ile Asp Tyr Glu Val Glu Phe Arg  
1 5 10

<210> 152

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic  
peptide sequence

<400> 152

Ser Glu Ile Ser Tyr Glu Val Glu Phe Arg  
1 5 10

<210> 153

<211> 10

<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: synthetic  
peptide sequence

<400> 153  
Ser Glu Ile Asp Tyr Glu Val Glu Phe Arg  
1 5 10

<210> 154  
<211> 13  
<212> PRT  
<213> Artificial Sequence

<220>  
<221> SITE  
<222> (11)  
<223> Xaa=tryptophan

<220>  
<223> Description of Artificial Sequence: synthetic  
peptide sequence

<400> 154  
Ser Glu Ile Ser Tyr Glu Val Glu Phe Arg Xaa Lys Lys  
1 5 10

<210> 155  
<211> 18  
<212> PRT  
<213> Artificial Sequence

<220>  
<221> SITE  
<222> (16)  
<223> Xaa=tryptophan

<220>  
<223> Description of Artificial Sequence: synthetic  
peptide sequence

<400> 155  
Lys Thr Glu Glu Ile Ser Glu Ile Ser Tyr Glu Val Glu Phe Arg Xaa  
1 5 10 15

Lys Lys

<210> 156  
<211> 23  
<212> PRT  
<213> Artificial Sequence

<220>  
<221> SITE  
<222> (21)  
<223> Xaa=tryptophan

<220>



<223> Description of Artificial Sequence: synthetic  
peptide sequence

<400> 156

Gly Leu Thr Asn Ile Lys Thr Glu Glu Ile Ser Glu Ile Ser Tyr Glu Val  
1 5 10 15

Glu Phe Arg Xaa Lys Lys  
20

<210> 157

<211> 28

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic  
peptide sequence

<220>

<221> SITE

<222> (26)

<223> Xaa=tryptophan

<400> 157

Thr Arg Pro Gly Ser Gly Leu Thr Asn Ile Lys Thr Glu Glu Ile Ser  
1 5 10 15

Glu Ile Ser Tyr Glu Val Glu Phe Arg Xaa Lys Lys  
20 25

<210> 158

<211> 13

<212> PRT

<213> Artificial Sequence

<220>

<221> SITE

<222> (11)

<223> Xaa=tryptophan

<220>

<223> Description of Artificial Sequence: synthetic  
peptide sequence

<400> 158

Ser Glu Ile Ser Tyr Glu Val Glu Phe Arg Xaa Lys Lys  
1 5 10

<210> 159

<211> 18

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic  
peptide sequence

<220>

<221> SITE

<222> (16)

<223> Xaa=tryptophan

<400> 159

Lys Thr Glu Glu Ile Ser Glu Ile Ser Tyr Glu Val Glu Phe Arg  
1 5 10 15

Xaa Lys Lys

<210> 160

<211> 23

<212> PRT

<213> Artificial Sequence

<220>

<221> SITE

<222> (21)

<223> Xaa=tryptophan

<220>

<223> Description of Artificial Sequence: synthetic  
peptide

<400> 160

Gly Leu Thr Asn Ile Lys Thr Glu Glu Ile Ser Glu Ile Ser Tyr  
1 5 10 15

Glu Val Glu Phe Arg Xaa Lys Lys  
20

<210> 161

<211> 28

<212> PRT

<213> Artificial Sequence

<220>

<221> SITE

<222> (26)

<223> Xaa=tryptophan

<220>

<223> Description of Artificial Sequence: synthetic  
peptide sequence

<400> 161

Thr Arg Pro Gly Ser Gly Leu Thr Asn Ile Lys Thr Glu Glu Ile  
1 5 10 15

Ser Glu Ile Ser Tyr Glu Val Glu Phe Arg Xaa Lys Lys  
20 25

<210> 162

<211> 13

<212> PRT

<213> Artificial Sequence

<220>

<221> SITE

<222> (11)  
<223> Xaa=oregon green

<220>  
<223> Description of Artificial Sequence: synthetic  
peptide sequence

<400> 162  
Ser Glu Ile Ser Tyr Glu Val Glu Phe Arg Xaa Lys Lys  
1 5 10

<210> 163  
<211> 18  
<212> PRT  
<213> Artificial Sequence

<220>  
<221> SITE  
<222> (16)  
<223> Xaa=oregon green

<220>  
<223> Description of Artificial Sequence: synthetic  
peptide sequence

<400> 163  
Lys Thr Glu Glu Ile Ser Glu Ile Ser Tyr Glu Val Glu Phe Arg Xaa  
1 5 10 15

Lys Lys

<210> 164  
<211> 23  
<212> PRT  
<213> Artificial Sequence

<220>  
<221> SITE  
<222> (21)  
<223> Xaa=oregon green

<220>  
<223> Description of Artificial Sequence: synthetic  
peptide sequence

<400> 164  
Gly Leu Thr Asn Ile Lys Thr Glu Glu Ile Ser Glu Ile Ser Tyr Glu  
1 5 10 15

Val Glu Phe Arg Xaa Lys Lys  
20

<210> 165  
<211> 28  
<212> PRT  
<213> Artificial Sequence

<220>  
<221> SITE

<222> (26)

<223> Xaa=oregon green

<220>

<223> Description of Artificial Sequence: synthetic peptide sequence

<400> 165

Thr Arg Pro Gly Ser Gly Leu Thr Asn Ile Lys Thr Glu Glu Ile Ser  
1 5 10 15

Glu Ile Ser Tyr Glu Val Glu Phe Arg Xaa Lys Lys  
20 25

<210> 166

<211> 13

<212> PRT

<213> Artificial Sequence

<220>

<221> SITE

<222> (11)

<223> Xaa=oregon green

<220>

<223> Description of Artificial Sequence: synthetic  
peptide sequence

<400> 166

Ser Glu Ile Ser Tyr Glu Val Glu Phe Arg Xaa Lys Lys  
1 5 10

<210> 167

<211> 18

<212> PRT

<213> Artificial Sequence

<220>

<221> SITE

<222> (16)

<223> Xaa=oregon green

<220>

<223> Description of Artificial Sequence: synthetic  
peptide sequence

<400> 167

Lys Thr Glu Glu Ile Ser Glu Ile Ser Tyr Glu Val Glu Phe Arg  
1 5 10 15

Xaa Lys Lys

<210> 168

<211> 23

<212> PRT

<213> Artificial Sequence

<220>

<221> SITE  
<222> (21)  
<223> Xaa=oregon green

<220>  
<223> Description of Artificial Sequence: synthetic  
peptide sequence

<400> 168  
Gly Leu Thr Asn Ile Lys Thr Glu Glu Ile Ser Glu Ile Ser Tyr  
1 5 10 15  
Glu Val Glu Phe Arg Xaa Lys Lys  
20

<210> 169  
<211> 28  
<212> PRT  
<213> Artificial Sequence

<220>  
<221> SITE  
<222> (26)  
<223> Xaa=oregon green

<220>  
<223> Description of Artificial Sequence: synthetic  
peptide sequence

<400> 169  
Thr Arg Pro Gly Ser Gly Leu Thr Asn Ile Lys Thr Glu Glu Ile  
1 5 10 15  
Ser Glu Ile Ser Tyr Glu Val Glu Phe Arg Xaa Lys Lys  
20 25

<210> 170  
<211> 10  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: synthetic  
peptide sequence

<400> 170  
Ser Glu Val Asn Tyr Glu Val Glu Phe Arg  
1 5 10

<210> 171  
<211> 47  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: synthetic  
primer for site-directed mutagenesis of APP

<400> 171  
gagatctctg aaattagtta tgaagtagaa ttccgacatg actcagg

<210> 172  
<211> 48  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: synthetic  
primer for site-directed mutagenesis of APP

<400> 172  
tgagtcatgt cggaattcta cttcataact aatttcagag atctcctc 48

<210> 173  
<211> 47  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: synthetic  
primer for site-directed mutagenesis of APP

<400> 173  
gagatctctg aaagtagtta tgaagtagaa ttccgacatg actcagg 47

<210> 174  
<211> 48  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: synthetic  
primer for site-directed mutagenesis of APP

<400> 174  
tgagtcatgt cggaattcta cttcataact actttcagag atctcctc 48

<210> 175  
<211> 47  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: synthetic  
primer for site-directed mutagenesis of APP

<400> 175  
gagatctctg aaattagtta tgaagcagaa ttccgacatg actcagg 47

<210> 176  
<211> 48  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: synthetic  
primer for site-directed mutagenesis of APP

<400> 176  
tgagtcatgt cggaattctg cttcataact aatttcagag atctcctc 48

<210> 177  
<211> 5  
<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic peptide sequence

<400> 177

Val Ser Tyr Glu Val  
1 5

<210> 178

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic peptide sequence

<400> 178

Val Ser Tyr Asp Ala  
1 5

<210> 179

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic peptide sequence

<400> 179

Ile Ser Tyr Glu Val  
1 5

<210> 180

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic peptide sequence

<400> 180

Val Lys Met Asp Ala  
1 5

<210> 181

<211> 47

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic primer for generating mutant construct named MBPC125-SYEV

<400> 181  
gacatctctg aagtgagtta ttaggcagaa ttccgacatg actcagg 47

<210> 182  
<211> 48  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: synthetic  
primer for generating mutant construct named  
MBPC125-SYEV

<400> 182  
tgagtcacgt cggaattctg cctaataact cacttcagag atctctc 48

<210> 183  
<211> 6  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: synthetic  
peptide sequence

<400> 183  
Lys Lys Ser Tyr Glu Val  
1 5

<210> 184  
<211> 10  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: synthetic  
peptide sequence

<400> 184  
Val Glu Ala Asn Tyr Glu Val Glu Gly Glu  
1 5 10

<210> 185  
<211> 10  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: synthetic  
peptide sequence

<400> 185  
Val Glu Ala Asn Tyr Ala Val Glu Gly Glu  
1 5 10

<210> 186  
<211> 8  
<212> PRT  
<213> Artificial Sequence



<220>

<223> Description of Artificial Sequence: synthetic peptide sequence

<400> 186

Asp Tyr Lys Asp Asp Asp Asp Lys  
1 5

<210> 187

<211> 4

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic peptide sequence

<400> 187

Ser Tyr Glu Ala  
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<210> 188

<211> 4

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic peptide sequence

<400> 188

Ser Tyr Ala Val  
1

<210> 189

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic peptide sequence

<400> 189

Val Ser Tyr Glu Ala  
1 5

<210> 190

<211> 13

<212> PRT

<213> Artificial sequence

<220>

<223> Description of artificial sequence: synthetic peptide sequence

<400> 190

Ser Glu Ile Ser Tyr Glu Val Glu Phe Arg Trp Lys Lys  
1 5 10

<210> 191

<211> 23

<212> PRT

<213> Artificial sequence

<220>

<223> Description of artificial sequence: synthetic peptide sequence

<400> 191

Gly Leu Thr Asn Ile Lys Thr Glu Glu Ile Ser Glu Ile Ser Tyr Glu  
1 5 10 15

Val Glu Phe Arg Trp Lys Lys  
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<210> 192

<211> 15

<212> PRT

<213> Artificial sequence

<220>

<223> Description of artificial sequence: synthetic peptide sequence

<220>

<221> SITE

<222> (1)..(1)

<223> amino acid at position 1 is biotinylated

<220>

<221> SITE

<222> (14)..(14)

<223> cys at position 14 is derivatized with an oregon green

<400> 192

Lys Glu Ile Ser Glu Ile Ser Tyr Glu Val Glu Phe Arg Lys Lys  
1 5 10 15

<210> 193

<211> 22

<212> PRT

<213> Artificial sequence

<220>

<223> Description of artificial sequence: synthetic peptide sequence

<220>

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<222> (1)..(1)

<223> amino acid at position 1 is biotinylated

<220>

<221> SITE

<222> (21)..(21)

<223> cys at position 21 is derivatized with an oregon green

<400> 193

Gly Leu Thr Asn Ile Lys Thr Glu Glu Ile Ser Glu Ile Ser Tyr Glu  
1 5 10 15

Val Glu Phe Arg Lys Lys  
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<210> 194

<211> 6806

<212> DNA

<213> Artificial sequence

<220>

<223> Description of artificial sequence: synthetic DNA sequence

<400> 194

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| gtcaattcag  | ggtggtgaat | gtgaaaccag | taacgttata  | cgatgtcgca | gagtatgccg  | 120  |
| gtgtctctta  | tcagaccgtt | tcccgcgtgg | tgaaccaggc  | cagccacgtt | tctgcgaaaa  | 180  |
| cgcgggaaaa  | agtggaagcg | gcgatggcgg | agctgaatta  | cattcccaac | cgcgtaggcac | 240  |
| aacaactggc  | gggcaaacag | tcgttgctga | ttggcgttgc  | cacctccagt | ctggccctgc  | 300  |
| acgcgccgtc  | gcaaattgtc | gcggcgatta | aatctcgcgc  | cgatcaactg | ggtgccagcg  | 360  |
| tgggtggtgtc | gatggtagaa | cgaagcggcg | tcgaagcctg  | taaagcggcg | gtgcacaatc  | 420  |
| ttctcgcgca  | acgcgtcagt | gggctgatca | ttaaactatcc | gctggatgac | caggatgccca | 480  |
| ttgctgtgga  | agctgcctgc | actaatgttc | cggcgttatt  | tcttgatgtc | tctgaccaga  | 540  |
| cacccatcaa  | cagtattatt | ttctcccatg | aagacggtag  | gcgactgggc | gtggagcatc  | 600  |
| tggtcgcatt  | gggtcaccag | caaatcgcg  | tgtagcggg   | ccattaagt  | tctgtctcgg  | 660  |
| cgcgctctcg  | tctggctggc | tggcataaat | atctcactcg  | caatcaaatt | cagccgatag  | 720  |
| cggaaacggga | aggcgactgg | agtgccatgt | ccggttttca  | acaaaccatg | caaagtctga  | 780  |
| atgagggcat  | cggtcccat  | gcgatgctgg | ttgccaacga  | tcagatggcg | ctgggcgcaa  | 840  |
| tgcgcgccat  | taccgagtcc | gggctgcgcg | ttggtgcgga  | tatctcggtg | gtgggatacg  | 900  |
| acgataccga  | agacagctca | tggtatatcc | cgccgttaac  | cacccatcaa | caggattttc  | 960  |
| gcctgctggg  | gcaaaccagc | gtggaccgct | tgctgcaact  | ctctcagggc | caggcggtga  | 1020 |
| agggcaatca  | gctgttgccc | gtctcactgg | tgaaaagaaa  | aaccaccctg | gcgccaata   | 1080 |
| cgcaaaccgc  | ctctccccgc | gcgttggccg | attcattaat  | gcagctggca | cgacagggtt  | 1140 |
| cccgactgga  | aagcgggcag | tgagcgcaac | gcaattaatg  | tgagttagct | cactcattag  | 1200 |
| gcacaattct  | catgtttgac | agcttatcat | cgactgcacg  | gtgcaccaat | gcttctggcg  | 1260 |
| tcaggcagcc  | atcggaagct | gtggtatggc | tgtgcaggtc  | gtaaatcact | gcataattcg  | 1320 |
| tgtcgctcaa  | ggcgactcc  | cgttctggat | aatgtttttt  | gcgccgacat | cataacggtt  | 1380 |
| ctggcaaata  | ttctgaaatg | agctgttgac | aattaatcat  | cggctcgat  | aatgtgtgga  | 1440 |
| attgtgagcg  | gataacaatt | tcacacagga | aacagccagt  | ccgtttaggt | gttttcacga  | 1500 |
| gcacttcacc  | aacaaggacc | atagattatg | aaaactgaag  | aaggtaaact | ggtaatctgg  | 1560 |
| attaacggcg  | ataaaggcta | taacggtctc | gctgaagtcg  | gtaagaaatt | cgagaaagat  | 1620 |
| accggaatta  | aagtcaccgt | tgagcatccg | gataaactgg  | aagagaaatt | cccacaggtt  | 1680 |
| gcggcaactg  | gcgatggccc | tgacattatc | ttctgggcac  | acgaccgctt | tggtagctac  | 1740 |
| gctcaatctg  | gcctgttggc | tgaaatcacc | ccggacaaag  | cgttccagga | caagctgtat  | 1800 |
| ccgtttacct  | gggatgccgt | acgttacaac | ggcaagctga  | ttgcttacct | gatcgctgtt  | 1860 |
| gaagcgttat  | cgctgattta | taacaaagat | ctgctgccga  | acccgcaaaa | aacctgggaa  | 1920 |

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|------------|-------------|-------------|-------------|------------|-------------|------|
| gagatccccg | cgctggataa  | agaactgaaa  | gcgaaaggta  | agagcgcgct | gatgttcaac  | 1980 |
| ctgcaagaac | cgtacttcac  | ctggccgctg  | attgctgctg  | acgggggtta | tgcgttcaag  | 2040 |
| tatgaaaacg | gcaagtacga  | cattaaagac  | gtgggcgtgg  | ataacgctgg | cgcgaaagcg  | 2100 |
| ggtctgacct | tcctggttga  | cctgattaaa  | aacaaacaca  | tgaatgcaga | caccgattac  | 2160 |
| tccatcgag  | aagctgcctt  | taataaaggc  | gaaacagcga  | tgaccatcaa | cgggccgtgg  | 2220 |
| gcatggtcca | acatcgacac  | cagcaaagtg  | aattatggtg  | taacggtact | gccgaccttc  | 2280 |
| aagggtcaac | catccaaacc  | gttcgttggc  | gtgctgagcg  | caggtattaa | cgccgccagt  | 2340 |
| ccgaacaaag | agctggcgaa  | agagttcctc  | gaaaactatc  | tgctgactga | tgaaggctctg | 2400 |
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| ttggcgaaag | atccacgtat  | tgccgccacc  | atggaaaacg  | cccagaaagg | tgaaatcatg  | 2520 |
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| cgacatgact | caggatatga  | agttcatcat  | caaaaattgg  | tgttctttgc | agaagatgtg  | 2820 |
| ggttcaaaca | aagggtgcaat | cattggactc  | atggtgggcg  | gtgttgtcat | agcgacagtg  | 2880 |
| atcgtcatca | ccttggtgat  | gctgaagaag  | aaacagtaca  | catccattca | tcatggtgtg  | 2940 |
| gtggaggttg | acgccgctgt  | caccccagag  | gagcgccacc  | tgtccaagat | gcagcagaac  | 3000 |
| ggctacgaaa | atccaaccta  | caagttcttt  | gagcagatgc  | agaactagac | ccccgccaca  | 3060 |
| gcagcctctg | aagttggaca  | gcaaaaccat  | tgcttcaacta | cccatcggtg | tccatttata  | 3120 |
| gaataatgtg | ggaagaaaca  | aaccggtttt  | atgatttact  | cattatcgcc | ttttgacagc  | 3180 |
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| tatctctctt | tacatttttg  | tctctatact  | acattattaa  | tgggttttgt | gtactgtaaa  | 3300 |
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| gcgtaatagc | gaagaggccc  | gcaccgatcg  | cccttcccaa  | cagttgcgca | gcctgaatgg  | 3540 |
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| atcagaacgc | agaagcggtc  | tgataaaaaca | gaatttgcct  | ggcggcagta | gcgcggtggt  | 3660 |
| cccacctgac | cccatgccga  | actcagaagt  | gaaacgccgt  | agcgccgatg | gtagtgtggg  | 3720 |
| gtctcccat  | gcgagagtag  | ggaactgcc   | ggcatcaa    | aaaacgaaag | gctcagtcga  | 3780 |
| aagactgggc | ctttcgtttt  | atctgttggt  | tgtcggtgaa  | cgctctcctg | agtaggacaa  | 3840 |

|            |             |            |            |             |            |      |
|------------|-------------|------------|------------|-------------|------------|------|
| atccgccggg | agcggatttg  | aacgttgcca | agcaacggcc | cggaggggtgg | cgggcaggac | 3900 |
| gcccgccata | aactgccagg  | catcaaatta | agcagaaggc | catcctgacg  | gatggccttt | 3960 |
| ttgcgtttct | acaaactctt  | tttgtttatt | tttctaaata | cattcaaata  | tgtatccgct | 4020 |
| catgagacaa | taaccctgat  | aaatgcttca | ataatattga | aaaaggaaga  | gtatgagtat | 4080 |
| tcaacatttc | cgtgtcgccc  | ttattccctt | ttttgcgcca | ttttgccttc  | ctgtttttgc | 4140 |
| tcacccagaa | acgctgggtga | aagtaaaaga | tgctgaagat | cagttgggtg  | cacgagtggg | 4200 |
| ttacatcgaa | ctggatctca  | acagcggtaa | gaccttgag  | agttttcgcc  | ccgaagaacg | 4260 |
| ttttccaatg | atgagcactt  | ttaaagttct | gctatgtggc | gcggtattat  | cccgtgttga | 4320 |
| cgccgggcaa | gagcaactcg  | gtcgccgcat | acactattct | cagaatgact  | tggttgagta | 4380 |
| ctcaccagtc | acagaaaagc  | atcttacgga | tggcatgaca | gtaagagaat  | tatgcagtgc | 4440 |
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| gaaggagcta | accgcttttt  | tgcacaacat | gggggatcat | gtaactcgcc  | ttgatcgttg | 4560 |
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| aatggcaaca | acgttgcgca  | aactattaac | tggcgaacta | cttactctag  | cttcccggca | 4680 |
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<210> 195

<211> 13

<212> PRT

<213> Artificial sequence

<220>

<223> Description of artificial sequence: synthetic peptide sequence

<220>

<221> MOD\_RES

<222> (1)..(1)

<223> ACETYLTATION (MCA)

<220>

<221> SITE

<222> (11)..(11)

<223> 2,4-dinitrophenyl group after the Lys at position 11

<400> 195

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Glu | Val | Asn | Leu | Asp | Ala | Glu | Phe | Arg | Lys | Arg | Arg |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |

<210> 196

<211> 12

<212> PRT

<213> Artificial sequence

<220>

<223> Description of artificial sequence: synthetic peptide sequence

<220>

<221> SITE

<222> (4)..(4)

<223> amino acid at position 4 has been derivatized with a statine

<400> 196

|     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Glu | Val | Asn | Val | Ala | Glu | Phe | Arg | Gly | Gly | Cys |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |

<210> 197

<211> 10

<212> PRT

<213> synthetic peptide sequence

<220>

<221> SITE

<222> (4)..(4)

<223> amino acid at position 4 has been derivatized with a statine

<220>



<221> SITE

<222> (10)..(10)

<223> amino acid at position 10 has been derivatized with Bodipy FL

<400> 197

|     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Glu | Val | Asn | Val | Ala | Glu | Phe | Arg | Cys |
| 1   |     |     |     | 5   |     |     |     |     | 10  |